Effect of Inventory Management on Financial Performance of Firms Funded by Government Venture Capital in Kenya

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Abstract

The purpose of this study was to investigate the effect of inventory management on the financial performance as well as to explore the moderating effect of political environment on the financial performance of firms funded by Government Venture capital in Kenya. The target population comprised all firms funded by government venture capital in Kenya. Twenty four firms had been funded by government venture capital through ICDC as at 31st December, 2013. The study adopted a census approach because of the small number of firms. The study reviewed both theoretical and empirical literature on inventory management. From the review of related literature, a comprehensive conceptual framework of argument of the relationship between inventory management and firm financial performance was formulated.   Based on the conceptual framework, a questionnaire was formulated and with the use of Cronbach's Co-efficient Alpha the instrument's validity and reliability was tested through a pilot study. The pretested questionnaire was used to collect primary data for the independent variables while a record survey sheet was used to collect secondary data for the dependent variable. Out of 72 respondents, 51 responded, being 71%. Statistical package for social sciences (SPSS) version 20.0 was used as the statistical tool for analysis of the data. Normality tests were carried on the dependent variable. Multi collinearity and homoscedasticity tests were carried out on the independent and dependent variables respectively. Quantitative data was analyzed and described using descriptive and inferential statistics. Scatter plots were used to test if linear relationships existed after which inferential statistics analysis for every variable was made. There are few studies in Kenya on Cash flow management and financial performance and therefore this study was an attempt to fill this gap and provide empirical evidence on the effect of cash flow management on the financial performance of firms funded by government venture capital in Kenya.

Keywords: Working capital management, financial performance, inventory management, EOQ.

1. Introduction

Inventory management is key in facilitating the firms' efficient operations. Inventory can be classified in three groups: raw materials which are the stock that have been purchased to be used in the process of production; work-in-progress which represents partially finished products and finished products which represent items of stock ready to be monetized Pandey (2008).   Ashok (2013) defines inventory as the stock pile of products a firm is offering for sale in various components making up the product which includes stock of raw material, goods in process, finished goods in stores and spares. Mohammad (2014) assert that a manager should consider ordering costs, carrying costs and stock out costs of inventory in defining the inventory level of a firm. Madishth and Kibona (2013) posit that destroying obsolete inventory is destroying capital which position is supported by Padachi (2006) who recommends that obsolete inventory needs to be written down, auctioned or given out bearing in mind that obsolete inventory level is symptomatic of poor products, poor management forecast of demand and poor inventory management. According to Azhagaiah (2009), inventory levels in an organization are linked to employee training, customer needs and the concerned industry. Poor inventory control leads to obsolete inventory which is a cost and has a negative effect on financial performance of a firm Vedran (2009).

Inventory is the stock purchased with the purpose of resale in order to gain a profit and represents the largest cost to firms especially manufacturing firms (Ashok, 2013). Inventory should then be managed well in order to facilitate operations. Studies by Salla (2013) argue that the success of inventory management is highly dependent on technological and managerial resources. Meyer et al. (2006) and Josin (2010) advocate for tight policy measures and resources which can categorize customers for credit extension and product requirements. Other studies that support a dedicated inventory resource include that by Maria (2014) which found that dedicated inventory resource dependent on human factors ensured debtor collection and good control of inventory. A firm needs a control system to effectively manage inventory and the system it adopts must be the most efficient and effective according to Pandey (2008).   Pandey (2008) continue to assert that small firms should adopt simple two bin systems while large firms may choose to adopt very complicated systems such as ABC inventory control systems or Just in Time (JIT) systems.   The study by Grablowsky (2005) established that only large firms had adopted sound inventory control systems for determining inventory re-order and stock levels through the use of EOQ and linear programming to provide for additional information for decision while small firms used management judgment and experience without quantitative back up. Computerized accounting systems were vital in planning stocks based on forecast, contracts and supply based on existent stock (Vedran,

2009).

Inventory holding should be managed well to facilitate a firms operations while considering the re-ordering costs, carrying costs and stock out costs. Ashok (2013) note that inventory holding establishes a link between production and sales. On a sample of 20 large cement Companies in India, Ashok (2013) established that inventory conversion period had an inverse relationship with profitability. Another study by Anuo (2014) show that firms financial structure as reflected in cash, trade credit policy and leverage has a significant effect on inventory accumulation indicating that financial strength affects a firm's inventory growth.

An efficient and sound inventory tracking system is capable of assisting a firm in maximizing profits. Keeping accurate records held firms reduce pilferages and theft as well as maintain ideal levels without distracting operations. Nyabwanga (2013) study established that good performance is positively related to efficiency in inventory management which include tracking of inventory levels. Both excessive and inadequate inventories are not desirable. The dangers of excessive inventories are that stockholding costs are too high and as a result, a firm's profitability is reduced whereas inadequate inventories disrupt a firms operations (Atrill, 2006). According to Ashok (2013) the adequate and timely flow of inventory is imperative for the success and growth of any firm. Inventory can be used to check the liquidity and operating efficiencies of any firm. Inventory applications could be tested using inventory turnover as a measure of the number of times per annum stock or inventory has been replaced. Further studies by Lindo (2009), Padach (2006) and Rajesh (2011) indicate that inventory turnover calculations are significant as more often stock turnover in a given period are directly related to the amount of gross profit. Such studies highly show that inventory turnover levels which are high are always advantageous. Low rates of inventory turnover may indicate stock piling, wrong purchases as well as poor sales strategies. If inventory turnover increases firms generate more sales for every unit of asset held.

An ideal level of inventories is a good indicator that the inventories are well managed and this leads to increased financial performance Atrill (2006). There are certain costs that relate with holding too much inventory and costs relating to holding too little inventory. Maintaining optimal inventory levels reduces the cost of possible interruptions in operations or loss of business due to scarcity of products while reducing supply costs and protects against price fluctuations Nyabwanga et al (2012). However Mathuva (2010) argue that the amount of inventory would depend on industry basis as well as the type of products offered.   Lazaridis and Tryfonidis (2006), and Anuo (2014) assert that managers can create profits or their firms by handling correctly the cash conversion cycle by keeping all components of cash flow to an optimal level.

The purpose of this study was to determine the effect of inventories management on financial performance of firms funded by government venture capital in Kenya, the null hypothesis was stated as:

H_0:   There is no significant relationship between inventories management and the financial performance of firms funded by government venture capital in Kenya

II Literature Review and Conceptual Framework

The Economic Order Quantity Model is an inventory control model which is based on minimization of costs in relation to stock holding and stock ordering. Atrill (2006) state that the EOQ determines the ordering quantity at which stock holding cost is equal to stock ordering cost and that EOQ suggests the optimal inventory size as the point at which stock holding costs equals stock ordering costs. EOQ is the optimal inventory level. By use of this EOQ model, firms can put in place an effective inventory management system to ensure reliable sales forecasts to be used in ordering purposes Atrill (2006).   For application of EOQ model, several assumptions must be considered; the usage of stored product is assumed to be steady; there is only one product produced; annual demand requirements are known; demand rate is evenly spread throughout the year and is constant; lead time does not vary; the ordering costs are assumed to be constant; carrying costs of inventory are constant per unit of inventory; each order is received in a single delivery and there is no quantity discounts. This model takes only variable costs into consideration although fixed costs can be included (Ross, 2008). The model is expresses as:

EOQ = $\sqrt{2DS/H}$

As provided by Nyabwanga et al (2012), maintaining optimal inventory levels reduces the cost of business interruptions due to scarcity of products, reduces supply costs while protecting a firm against price fluctuations. Dunn (2009) assert that a business cannot shut its operations simply because it has made a loss in a single financial year but when the business makes losses continuously in consecutive years, this jeopardizes the viability of that business.   Padachi (2010) posit that the main factors that contribute to success or failure of a business can be categorized as internal and external financial management factors.

A study by Agha (2014) provide that a sustainable business requires efficient inventory management and that the higher the amount of profit a firm reports, the better the firm is seen as earning more money on capital invested. According to Ashok (2013) the adequate and timely flow of inventory is imperative for the success and growth of any firm. According to the study by Ashok (2013), inventory can be used to check the liquidity and operating efficiencies of any firm. Inventory applications could be tested using inventory turnover

as a measure of the number of times per annum stock or inventory has been replaced. Ashok (2013) study used regression analysis to determine the impact of inventory, conversion period over gross operating profit and established a significant negative linear relationship between inventory conversion period and profitability. Dong and Su (2010) study concluded that a firm's profitability and liquidity are affected by working capital management. The study assessed the companies listed in the Vietnam Stock Exchange for the period between 2006 and 2008 by use of pooled data. The study focused on cash conversion cycle and related elements to measure capital management and found that the relationship among these variables were strongly negative and that profitability increased as the debtor's collection period and inventory conversion period reduce.

Further studies by Lindo (2009), Padach (2006) and Rajesh (2011) indicate that inventory turnover calculations are significant as more often stock turnover in a given period are directly related to the amount of gross profit. Such studies highly show that inventory turnover levels which are high are always advantageous. This is true since low rates of inventory turnover would indicate stock piling, wrong purchases as well as poor sales strategies. Moreover, the strategic profit model under the Dupont formula supports the studies by Lindo, Padach and Rajesh that if asset turnover increases firms generate more sales for every unit of asset held. The study by Lazaridis and Dimitrios (2005) highlighted the importance of firm's keeping their inventory at an optimum level by analyzing the relationship between working capital management and corporate profitability established a strong negative relationship between inventory turnover in days and the profitability of a firm. The study by Mathuva (2009) on the influence of working capital management components on corporate profitability using a sample of 30 firms listed in the Nairobi Stock Exchange for the period between 1993 and 2008, used the pooled OLS and the fixed effects regression model and established a highly positive significant relationship between conversion of inventories into sales and profitability. This means that firms that maintain sufficiently high inventory levels reduce costs of business interruptions in the product process and loss of business due to scarcity of products.

CONCEPTUAL FRAMEWORK

A conceptual framework refers to a group of concepts which are systematically organized to provide a focus, a tool and rational for interpretation and integration of information and is usually achieved in pictorial illustrations (Njeru, 2015). The variables indicate the statistics that were related to this study.
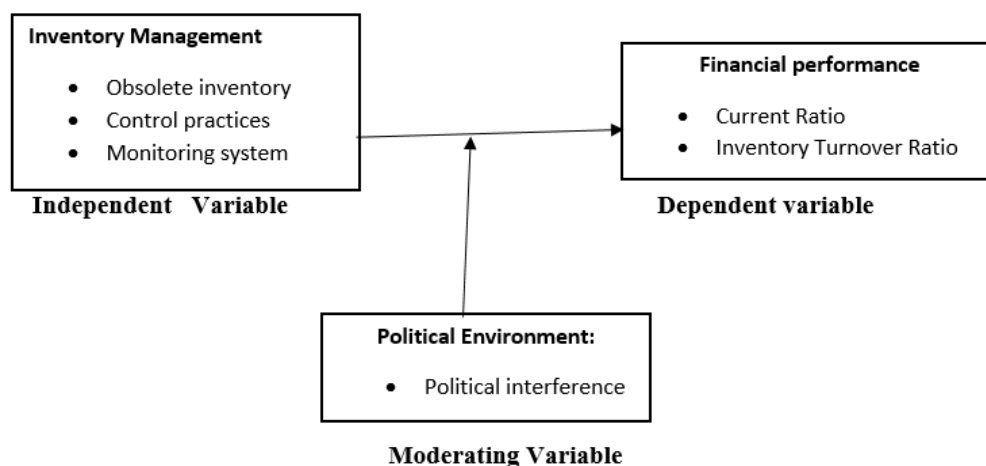
HYPOTHESIS

i. There is no significant relationship between inventory management and financial performance of firms funded by Government venture capital in Kenya.

III Methodology

This study used descriptive research design to establish the association between inventory management and financial performance of a firm. A census was used and all the 24 firms funded by government venture capital in Kenya through ICDC were studied. A structured questionnaire was used to collect data. Data was analyzed by use of the SPSS program. For reliability purposes of the tool, a reliability test was done. A Cronbach' alpha of 0.762 was established which was more than the 0.7 threshold advocated by Nunnaly and Berstein (1994). Factor analysis was done to ensure that all questions were relevant and made sense with a load of 0.4 as the benchmark. All the questions had a factor load of between 0.807 and 0.455. Descriptive analysis showed the percentages, means and standard deviation of different items in the study while quantitative analysis showed the Pearson correlation, ANOVA and regression analysis. Pearson correlation showed the degree of association between

inventory management and financial performance.

IV   Findings and Discussion
Descriptive Analysis

Table 1: Rate of response

	Respondents	Percentage (%)
Returned	51	71.9
Not returned	20	28.1
Total distributed	71	100

Table 1 shows that 71 questionnaires were administered to the Finance officers, operation officers and human resource officers of firms funded by government venture capital in Kenya. 51 questionnaires were returned which represented 71.9%. 20 questionnaires, representing 28.1% of the total number of questionnaires were not returned.

Table 2: Is Stocks held in raw form and finished goods

	Yes	No
Does the firm hold stock in raw form as well as finished goods	53.2%	46.8%

Table 2 shows that 53.2% of the respondents stated that their firms held stocks of raw materials and finished goods while 46.8% responded no. The stock pile holding of most of the firms funded by Government venture capital is in line with studies conducted by Ashok (2013) that supported inventory holding since it establishes a link between production and sales. On a sample of 20 large cement Companies in India, Ashok further found out that inventory conversion period had an inverse relationship with profitability. Another study by Anuo (2014) show that firms financial structure as reflected in cash, trade credit policy and leverage has a significant effect on inventory accumulation indicating that financial strength affects a firm's inventory growth.

Table 3: Period firm hold stock

	1 – 10 days	11 – 20 days	21 – 30 days	over 30 days
How long are stocks held before they are sold?	21.3%	12.1%	30.3%	36.3%

Table 3 show that 21.3% of the respondents said their firms held stock for between 1 and 10 days, 12.1% between 11 and 20 days, 30.3% between 21 and 30 days while 36.3% indicated over 30 days. Holding inventories involves unnecessary investment. This study finding corresponds to findings of the study done by Ashok (2013) over the period 2001-2010 on Cement manufacturing firms in India where Ashok found that firms had a significant variability in inventory conversion cycles of between 36% and 51.7%

Table 4: Computerized system for tracking level of stock

	Yes	No
Does the firm have a computerized accounting system that keeps track of the level of Stock held by the company?	87.8%	12.2%

Table 4 show that 87.8% of the respondents indicated that their firms had a computerized inventory tracking system while 12.2% indicated no. This implies that stock tracking was seen as an important task. A Study by Munteanu, Zuca and Tinta (2007) argue that computerized accounting systems were vital in planning stocks based on forecast, contracts and supply based on existent stock.

Table 5. How the firm deal with obsolete inventory

	Auction	Destroy	Give out	Recycle
How the firm deal with obsolete inventory	28.9%	71.1%	.0%	.0%

Table 5 indicates that 28.9%% of the firms' destroyed obsolete inventory while 71.1% destroyed obsolete inventory. Madishth and Kibona (2013) posit that destroying obsolete inventory is destroying capital which position is supported by Padach (2006) who recommends that obsolete inventory needs to be written down, auctioned or given out bearing in mind that obsolete inventory levels is symptomatic of poor products, poor management forecast of demand and poor inventory management.

Correlation Analysis
Table 6: Correlations between inventory management and financial performance

		Financial Performance	Inventory Management
Financial performance	Pearson Correlation	1	.759**
	Sig. (2-tailed)		.000
	N	17	17
Inventory management	Pearson Correlation	.759**	1
	Sig. (2-tailed)	.000	
	N	17	17

Table 6 indicates there is a positive significant relationship between inventory management and financial performance of firms funded by government venture capital in Kenya. This relationship is illustrated by correlation coefficient of .759 at .01 significant level. The results conform to previous studies by Padachi (2006) and Vedran (2009) who found that inventory management is an aspect of a firm's investment decision and is key to a firm's profitability. This positive relations indicate that firms funded by government venture capital in Kenya have installed sound inventory management systems.

Regression Analysis
Table 7: Model Summary of inventory management

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.759	.577	.548	474.59856

a. Predictors: (Constant), Inventory Management

Table 7 provide R and R^2 values representing the sample correlation. The R^2 value of 0.577 meanings that 57.7% of the corresponding variation in financial performance of firms funded by government venture capital in Kenya can be explained by change in inventory management. The other 42.3% can be explained by other factors not in the regression.

Table 8: ANOVA for inventory management and financial performance

	Sum of Squares	df	Mean Square	F	Sig.
Regression	4599555.044	1	4599555.044	20.420	.000
Residual	3378656.866	15	225243.791		
Total	7978211.909	16			

Table 8 A one way analysis of variance (ANOVA) was used to form a basis for tests of significant. The ANOVA for the linear model of inventory management and financial performance of firms funded by government venture capital in Kenya has a F value = 20.420 which is significant with p value = 0.000 < 0.05 meaning the overall model is significant in the prediction of financial performance of firms funded by government venture capital in Kenya. We therefore reject the null hypothesis that inventory management does not have an effect on the financial performance of firms funded by government venture capital in Kenya and confirm that there is a positive and significant relationship between inventory management and financial performance of firms funded by government venture capital in Kenya.

Table 9: Coefficients of Inventory Management and Financial Performance

			Coefficients		
	B	Std. Error	Beta	T	Sig.
Constant	-1195.037	535.798		2.230	.041
Inventory Management	3.476	.769	.759	4.519	.000

Table 9 on analysis of the regression model coefficients show there is a positive beta co-efficient of 3.476 and a constant of -1195.037 with a p-value =0.041 <0.05. Therefore the constant does not contribute significantly to the model and it is not different from zero. However, inventory management contributes significantly to the model. Therefore the model can provide information needed to predict financial performance

from inventory management. The regression equation is presented as follows: Financial Performance   = $3.476X_{3} + \varepsilon$.

For the regression line to be significant, as shown by Table 9, the following alternative hypothesis has to be true:

H_0 : $\beta_1 = 0$

H_1 : $\beta_1 \neq 0$

Therefore the null hypothesis was rejected and the study concluded that the alternative hypothesis $H_1 \neq 0$ which implies that inventory management has a significant relation on financial performance of firm's funded by government venture capital in Kenya.

V Conclusion and recommendation

Majority of the firms funded by government venture capital in Kenya have fair inventory management practices. However, there is more to be done in Kenya on inventory management and especially in the area of management of obsolete inventory as well as review and adherence to sound inventory management policies. Managers can create value for their shareholders by reducing the inventory turnover days to reasonable minimum.   It is recommended that further studies be conducted on other firms with an extended firm size. The scope can also be extended to other components of working capital management like accounts payable, cash flow management, working capital levels and human resource management.

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